Social Sciences Notes

DRUG ABUSE

The AMA on Marijuana

Marijuana experimentation among young people, particularly students, "may not be medically dangerous" if it doesn't lead to continuous use, the American Medical Association stated last week.

In its carefully worded statement, the AMA's committee on alcoholism and drug dependence both warned against the drug and admitted its low potential for harm.

Though there is no evidence that marijuana is addicting or that it causes lasting physical and mental changes, continuous use "may be associated with the development of psychiatric illness," said the AMA.

This means, in effect, that chronic potheads probably have an underlying emotional disorder and their psychological dependence on marijuana is a symptom of it.

But casual, episodic marijuana use is of concern primarily as a "medicolegal" problem—because it is illegal, said the AMA. Its experimental use among young people seems to reflect the normal adolescent desire for new and exciting experiences.

TECHNOLOGY GAP

Engineers Fear Rapid Pace

Scientists and engineers, of all people, fear the pace of technology as a threat to their jobs and professional competence, report the editors of INDUSTRIAL RESEARCH in their August issue.

Such fear is, in fact, justified since technical knowledge may decay as fast as five percent a year. By their tenth year after graduation, scientists and engineers depending only on college-gained knowledge may find half of their training useless.

Of 1,000 professionals surveyed, reports the magazine, 89 percent admitted having trouble keeping pace with new information.

The same professionals rated company courses and university seminars very low as a source of up-to-date information. Highest marks were given to journals, technical meetings and personal contacts.

ETHOLOGY

Snakes Know Prey by Odor

Snakes know their prey by its odor and can make the identification at birth, reports ethologist Gordon M. Burghart of the University of Chicago.

Each snake carries in its genes a chemical cue allowing it to recognize the exact prey normally eaten by that species, Dr. Burghart found by observing newborn snakes of more than 15 species.

The knowledge has been programmed into each species by evolution and is extremely resistant to change, Dr. Burghart says. Even after six months of being force-fed on a liver diet, young garter snakes still refuse the unnatural diet and immediately attack their normal food —worms—though they have never eaten worms before.

Dr. Burghart's work adds to recent discoveries that a single cue—a color or a smell—will trigger an entire series of actions from aggression to courtship. These actions are not learned, but passed down through the genes, at least in lower animals. The open question is whether any of these evolutionary behaviors have been preserved in man.

Dr. Burghart says in the August issue of PSYCHOLOGY TODAY, that an odor probably would not trigger specific acts in man as in the snake. Nevertheless it might release emotions, stemming from the misty evolutionary past.

PSYCHOLOGY

Critical Sleep Levels

A man can do arithmetic as well with three hours of sleep as with 7.5 hours, but he can't keep his senses sharply tuned with less than five, if British sailors are any example.

The different sleep requirements for sensory and mental tasks was reported by Dr. Robert T. Wilkinson, a psychologist at Cambridge, England, who tested sailors after allowing them either 1, 2, 3, 5 or 7.5 hours of sleep—or none at all.

Besides a test in addition, the sailors took an hour-long vigilance test in which they had to detect changes in sound intensity.

On addition, there was steady improvement with each hour of sleep up to three. After that performance was not greatly improved by five or seven hours of sleep.

But the sensory test produced very different results. Performance was just about as bad with two hours of sleep as none at all. Between three and five hours, the sailors steadily improved and then leveled off.

One question not answered by the English experiment is how long a man can continue performing well at these levels. Possibly the hours between five and 7.5 are necessary in the long-run.

TESTING

Honor Students Rank on Creativity

One of the most difficult human qualities to measure—creativity—seems to have been captured in tests of non-conventional thinking.

The tests were used on 38 top Australian science students, all of whom had about the same gifted intellects and the same good grades their first year at the University of New England, in 1963.

But 20 students were conventional thinkers, while 18 were "divergent" original thinkers, according to six tests of creativity.

The tests must have tapped some special quality because three years later, 11 of the divergent thinkers were accepted for honors, while only four of the conventional thinkers made it. That year, the university gave 19 honors degrees altogether.

In addition, the conventional thinkers took honors in just three sciences—mathematics, physical chemistry and physics. But the others won in four additional sciences—geology, biology, zoology and biochemistry.

The creativity tests, rather than measuring only logical, correct answers, as does as I.Q. tests, call for answers such as unusual uses for common products and figure completion. Until now they have not been well-linked to academic achievement, reports psychologist A. J. Cropley of the University of New England in Aug. 5 issue of NATURE.